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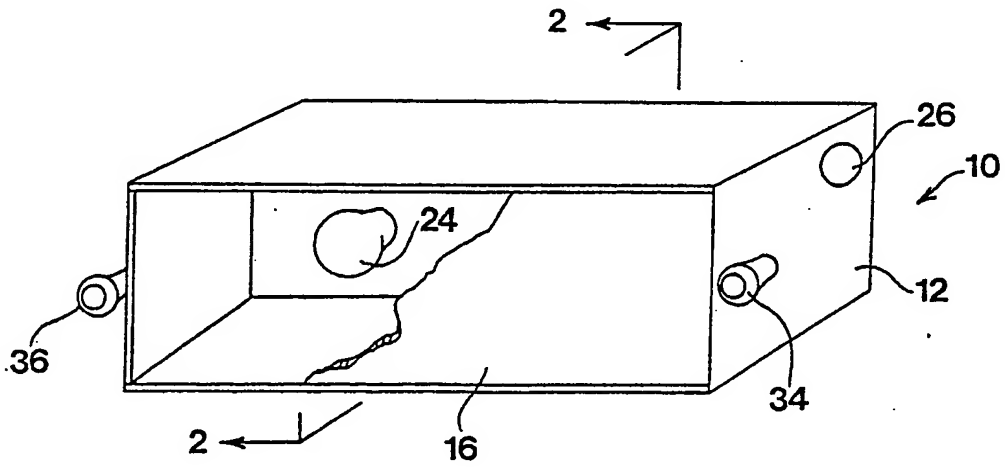

(57) Abstract

An advertising device including an enclosure (12) with a translucent front panel (16) for receiving advertising material. Electric lamps (24) are positioned within the enclosure and operable to illuminate the panel and the advertising material. A recorder sound device (39) is provided operable to produce an audible advertising message. The device includes control means (28) having sensing means (32) for sensing approach of a person to the vicinity of the device and operable to cause said electric lamps to be illuminated and said audible sound producing means to be operated.

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ADVERTISING SIGN

This invention relates to an advertising device.

According to one aspect of the invention there is provided an advertising device including:

(a) supporting structure for receiving advertising material;

(b) electrically operable lighting means positioned for illuminating, when operated, said advertising material when received on the supporting structure;

(c) control means including sensing means for sensing approach of a person to the vicinity of the device, for then causing said lighting means to be operated to effect said illuminating.

In another aspect, the invention provides:

(a) supporting structure for receiving advertising material;

(b) audible sound producing means operable to produce sounds audible to persons at least adjacent the device;

(c) control means including sensing means for sensing approach of a person to the vicinity of the device and for then causing said sound producing means to be operated.

The invention further contemplates advertising devices as described above in which both the said lighting means and audible sound producing means are provided and in which the said control means operates in use to cause both the lighting means and the sound producing means to be operated on sensing approach of a person to the vicinity of the device.

The sensing means may comprise known devices such as ultrasonic sound detection apparatus operable to direct ultrasonic sound away from the device and to detect reflected ultrasonic sound from objects, the apparatus operating in use to detect frequency shifts in received ultrasonic sound representative of movement of a person in the vicinity of the device.

With such an arrangement, the aforementioned apparatus may be operable to maintain either or both of the sound producing means or illuminating means operating for so long as movement of a person in the vicinity of the device is detected, and to continue such operation for a predetermined time after no such movement is detected.

In a preferred form, the supporting structure may comprise a substantially closed enclosure with a light transmissive panel thereon the lighting means including lights within the enclosure and behind the panel for illuminating the panel from behind when the lighting means is operated. The aforementioned audible sound producing means may

comprise means such as a tape recorder or a pre-programmed memory "chip" operable to reproduce recorded messages when the sound producing means is operated. Such messages may carry advertising content.

The invention is further described by way of example only with reference to the accompanying drawings.

Figure 1 is a perspective view of an advertising device constructed in accordance with the invention;

Figure 2 is a cross-section approximately on the line 2-2 in Figure 1;

Figure 3 is a block diagram of electrical circuitry included in the device of Figure 1;

Figure 4 is a block diagram of part of the electrical circuitry of Figure 3; and

Figure 5 is a detailed circuit diagram of part of the electrical circuitry of Figure 3.

The device 10 shown is in the form of a rectangular metal box 12 having a removable back 14 and a removable translucent plastics front panel 16. An upright wall 18 is provided inside box 12 so as to define a compartment 22 within the box between wall 18 and panel 16. A series of electric light sockets

20 are positioned on wall 18 within compartment 22, these receiving light globes 24 which, when illuminated, serve to illuminate the panel 16 from the rear so that, as viewed externally of the panel, the panel is lit up.

The panel 16 is capable of receiving advertising material (not shown) such as printed material or illustrations so that when the panel 16 is lit up from behind by operation of the electric globes 24, the panel 16 provides an advertising sign which is illuminated in a fashion which easily attracts attention of persons. A loudspeaker 26 is also positioned in box 12 in such a location as to permit sound generated thereby to emanate from the box such as via a perforated section of the box wall. As described later, the loudspeaker 26 is operable by a control circuit, which control circuit also operates globes 24, in such a fashion as to cause recorded advertising messages to be broadcast from the loudspeaker 26.

Box 12 contains the aforementioned control circuit, designated generally by reference numeral 28 in Figure 2. Circuit 28 includes the components shown in Figure 3. More particularly, the circuitry includes a "personnel detector" circuit 32 which is operable to cause an ultrasonic sound producing transducer 34 to generate ultrasonic sound waves which are directed away from the box 12 and forwardly from a location adjacent panel 16. A second transducer 36 is positioned to receive ultrasonic sound waves

which may have been directed back to the transducer 36 from transducer 34 by reflection from a person approaching device 10. Detector 32 receives electrical signals generated by transducer 36 pursuant to such reception. In the manner described later, the personnel detector 32 operates to detect frequency variations in the reflected ultrasonic sound which are caused by doppler effects when the ultrasonic sound directed away from the transducer 34 strikes a moving person. The detector 32 is thus, in essence, a movement detector and it produces an output signal which, on detection of such movement, is conditioned to cause a timing circuit 35 to be operated to, on the one hand, control a sound synthesizer device 39 to apply electrical signals to loudspeaker 26 to cause the aforementioned generation of sound. Furthermore, at the same time, the timing circuit 35 causes a power control circuit 37 to be conditioned to operate the globes 24. Power for the globes 24 and for operating the various circuitry described may be derived, for example, from the electric mains, the circuitry being provided with proper operating voltages from the supply by a power supply circuit 40.

The personnel detector 32 is shown in more detail in Figure 4. More particularly, it includes a transmitter 50 and a receiver 52. Transmitter 50 includes an oscillator 54 operable to produce a high frequency signal such as 40 K Hz which is applied

to the transducer 34. The receiver 52 includes a broad band amplifier 56 which receives electrical signal from the transducer 36 and which amplifier has a variable sensitivity. Signal from the broad band amplifier is passed in turn to a diode multiplier 58, a selective band pass filter 60, a diode pump 62, a noise discriminator 64 and thence to the timing circuit 35. The power control circuit 37 includes a relay drive circuit 66 which controls a relay 68 under influence of time.

Referring now to Figure 5 the power supply 40 comprises a transformer T1 the 15 volt alternating current voltage which is rectified by a bridge rectifier comprising the diodes D7, D8, D9, D10 shown. The rectified voltage is filtered to provide a positive voltage V_{DD} by a capacitor C9 whilst the regulated output V_{CC} is provided by the circuit IC2 shown and the capacitor C10 shown. The voltages V_{DD} and V_{CC} are applied to the places shown in Figure 5 for operating various components shown therein.

The oscillator 50 of Figure 4 is constituted by R14, R15, R15, R16, C11, C12 and IC3. The electrical signal so generated is as aforementioned applied to the transducer 34. The broad band amplifier 56 is constituted by the components R1, R2, R3, R4, R5, C1, P1, Q1 and Q2. The gain or sensitivity is selectable by variation of P1. The diode multiplier circuit 58 is constituted by components D1, C2 and R6.

The selective band pass active filter 60 is constituted by components IC1, C3, R7, R8, C4 and C5 and this operates in use to separate the carrier signal (i.e. the 40 K Hz signal mentioned in the example above) from the doppler signals generated pursuant to movement of the reflecting surface interposed in the acoustic path between transducer 34 and transducer 36. Only the doppler signal is allowed to pass on to the next stage constituted by diode pump 62. Diode pump 62 comprises components C6, R17, D2, D3, C7 and R9 and operates to rectify the aforementioned doppler signal to provide a direct current output signal representative of the doppler signal. The noise discriminator 64 is constituted by components Q3 and D4 and operates to detect a doppler signal only if it is above a selectable or preset noise threshold.

Circuit 35 is constituted by components R10, P2 and C8. This is an elapsed time timer which is activated whenever a movement within the defined sensor range of the apparatus is no longer detected.

The relay drive 66 is constituted by components Q4, R12, R11, C13, Q5 and R13 and is controlled by the timing circuit 35.

The relay 68 of Figure 3 is shown constituted by relay coil RL1. Diode D6 protects transistor Q5 from voltage transients occurring when current is disabled from coil RL1.

The components LD, R1 and D5 shown comprise an optionally fittable light detector which may be arranged to deactivate the globes 24 when ambient light levels are above a preset or selectable level.

The arrangement described operates, on detection of movement within the defined sensor range such as constituted by approach of a person to the box 12 to operate the sound synthesizer 39 and globes 24 for so long as such movement is detected. Once movement is no longer detected, timing device 35 operates to continue operation of both of the sound synthesizer 39 and globes 24 for a preselectable time such as a few seconds thereafter.

The sound synthesizer 39 may be constituted by, for example, a tape recorder having a prerecorded message or by other known components such as an electronic "chip" preprogrammed to generate any desired advertising signal.

While the invention has been described in relation to use of presence detectors constituted by arrangements having ultrasonic doppler detection means, other arrangements could be utilized. For example, infrared detectors could be utilized.

The described device may have no other purpose than as to advertise products or services or so as generally to convey information, but may also be incorporated as part of other apparatus such as an automatic or other vending machine and the term "advertising device" as used herein is to be understood as encompassing these possibilities.

CLAIMS

1. An advertising device including:

(a) supporting structure for receiving advertising material;

(b) electrically operable lighting means positioned for illuminating, when operated, said advertising material when received on the supporting structure;

(c) control means including sensing means for sensing approach of a person to the vicinity of the device, for then causing said lighting means to be operated to effect said illuminating.

2. An advertising device including:

(a) supporting structure for receiving advertising material;

(b) audible sound producing means operable to produce sounds audible to persons at least adjacent the device;

(c) control means including sensing means for sensing approach of a person to the vicinity of the device and for then causing said sound producing means to be operated to produce said sounds.

3. An advertising device including:

(a) supporting structure for receiving advertising material;

(b) electrically operable lighting means positioned for illuminating, when operated, said advertising material when received on the supporting structure;

(c) audible sound producing means operable to produce sounds audible to persons at least adjacent the device;

(d) control means including sensing means for sensing approach of a person to the vicinity of the device, for then causing said lighting means to be operated to effect said illuminating and said sound producing means to be operated to produce said sounds.

4. An advertising device as claimed in claim 1, said control means being operable to maintain the illuminating means operating for so long as movement of a person in the vicinity of the device is detected, and to continue such operation for a predetermined time after no such movement is detected.

5. An advertising device as claimed in claim 2, said control means being operable to maintain the sound producing means operating for so long as movement of a person in the vicinity of the device is detected, and to continue such operation for a predetermined time after no such movement is detected.

6. An advertising device as claimed in claim 3, said control means being operable to maintain at least one of the sound producing means and illuminating means operating for so long as movement of a person in the vicinity of the device as detected, and to continue such operation for a predetermined time after no such movement is detected.

7. An advertising device as claimed in claim 1, wherein the supporting structure comprises a substantially closed enclosure with a light transmissive panel thereon, the lighting means including lights within the enclosure and behind the panel for illuminating the panel from behind when the lighting means is operated.

8. An advertising device as claimed in claim 2, wherein audible sound producing means comprises means storing a recorded message for playback on said operation of the audible sound producing means.

9. An advertising device as claimed in claim 3, wherein the supporting structure comprises a substantially closed enclosure with a light transmissive panel thereon, the lighting means including lights within the enclosure and behind the panel for illuminating the panel from behind when the lighting means is operated, and said audible sound producing means comprises means storing a recorded message for playback on said operation of the audible sound producing means.

10. Information device having signal means operable to generate an information signal in a form capable of perception by the senses of a person, and control means including sensing means for sensing approach of a person to the vicinity of the device, for then causing said signal means to be operated to generate said signal.

11. Information device as claimed in claim 10 wherein said signal means generates said signal as a visual signal.

12. Information device as claimed in claim 10 or claim 11 wherein said signal means generates said signal as an audible sound.

13. Information device as claimed in any one of claims 10 to 12 wherein said signal carries an advertisement.

14. Information device as claimed in any one of claims 10 to 13 wherein said device is a vending machine.

FIG 1

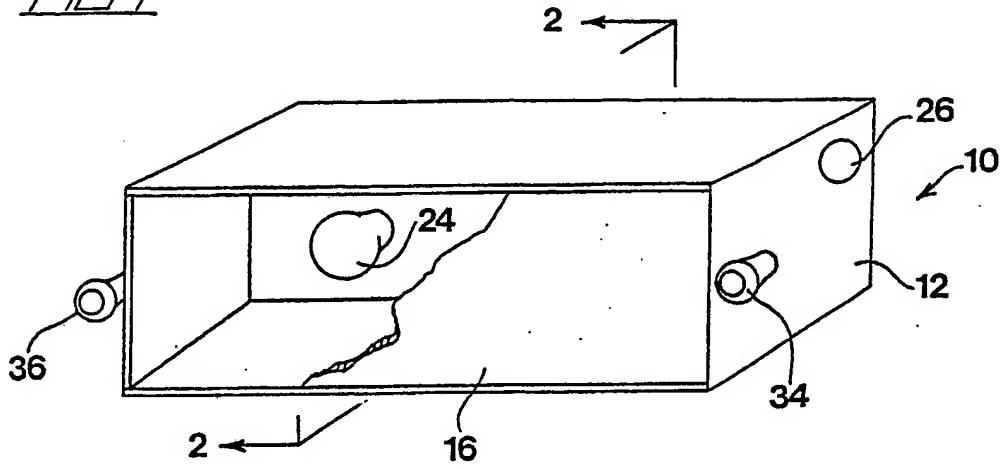
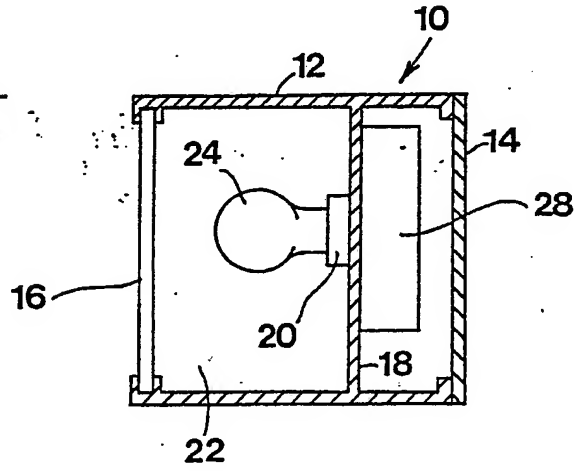


FIG 2



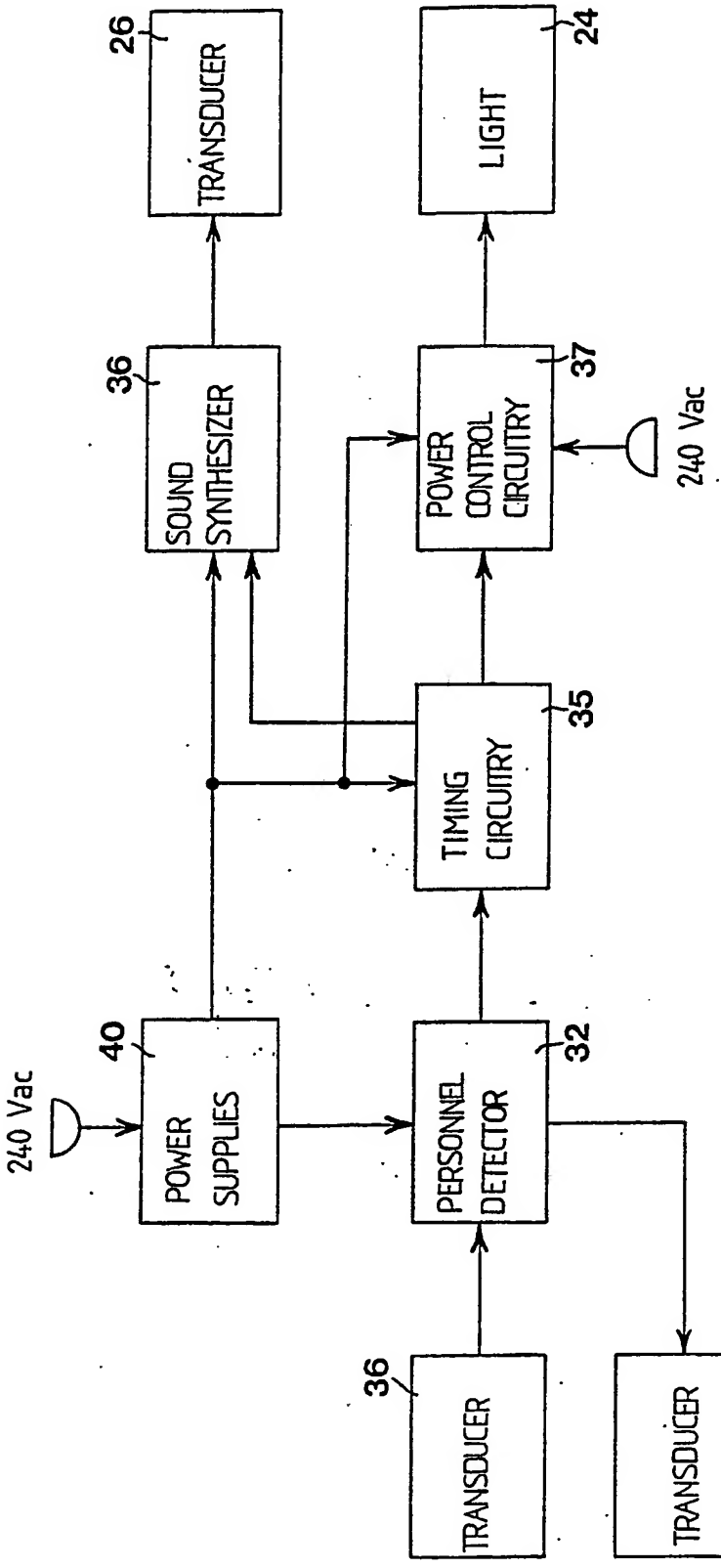


FIG 3

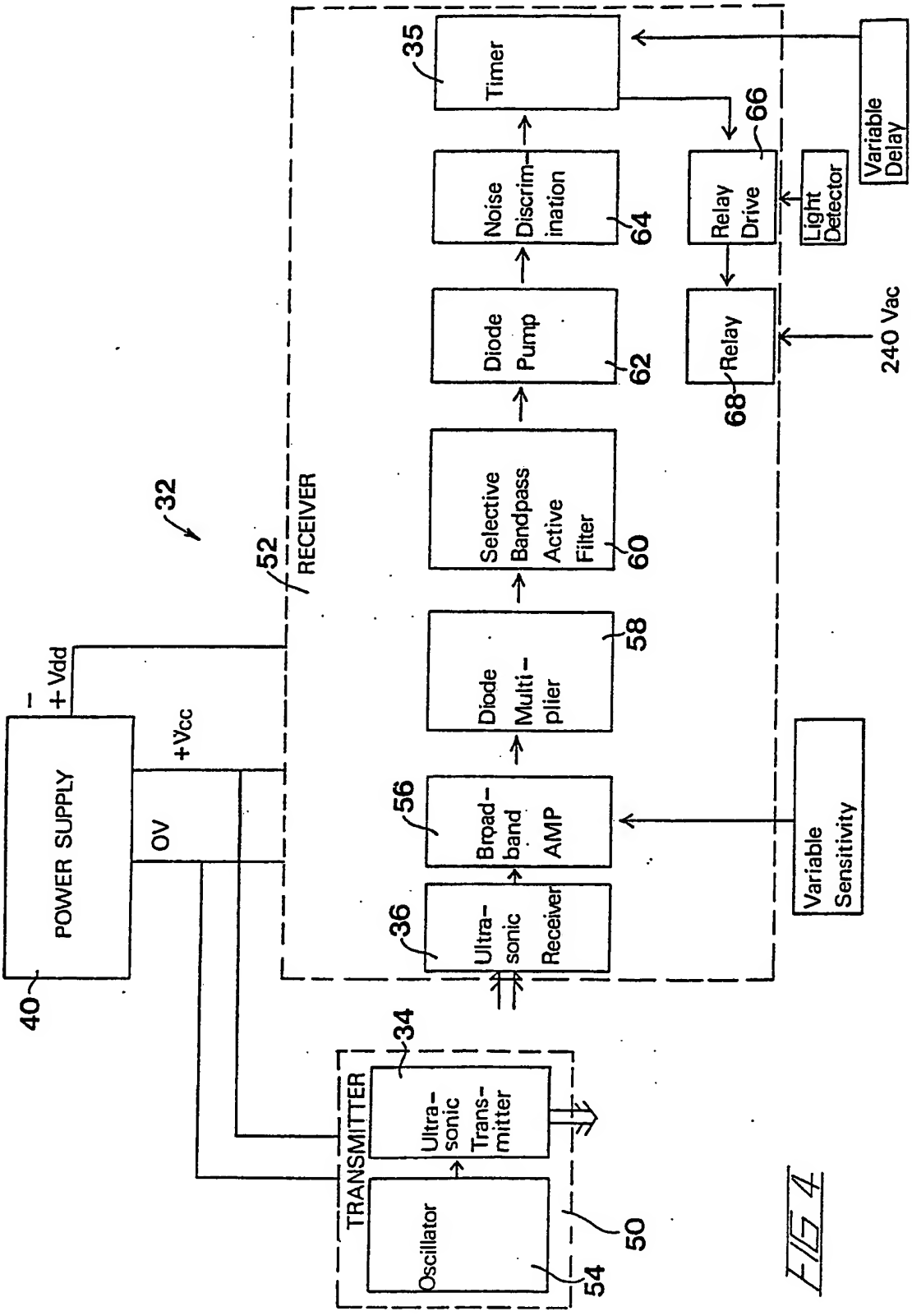


FIG 4

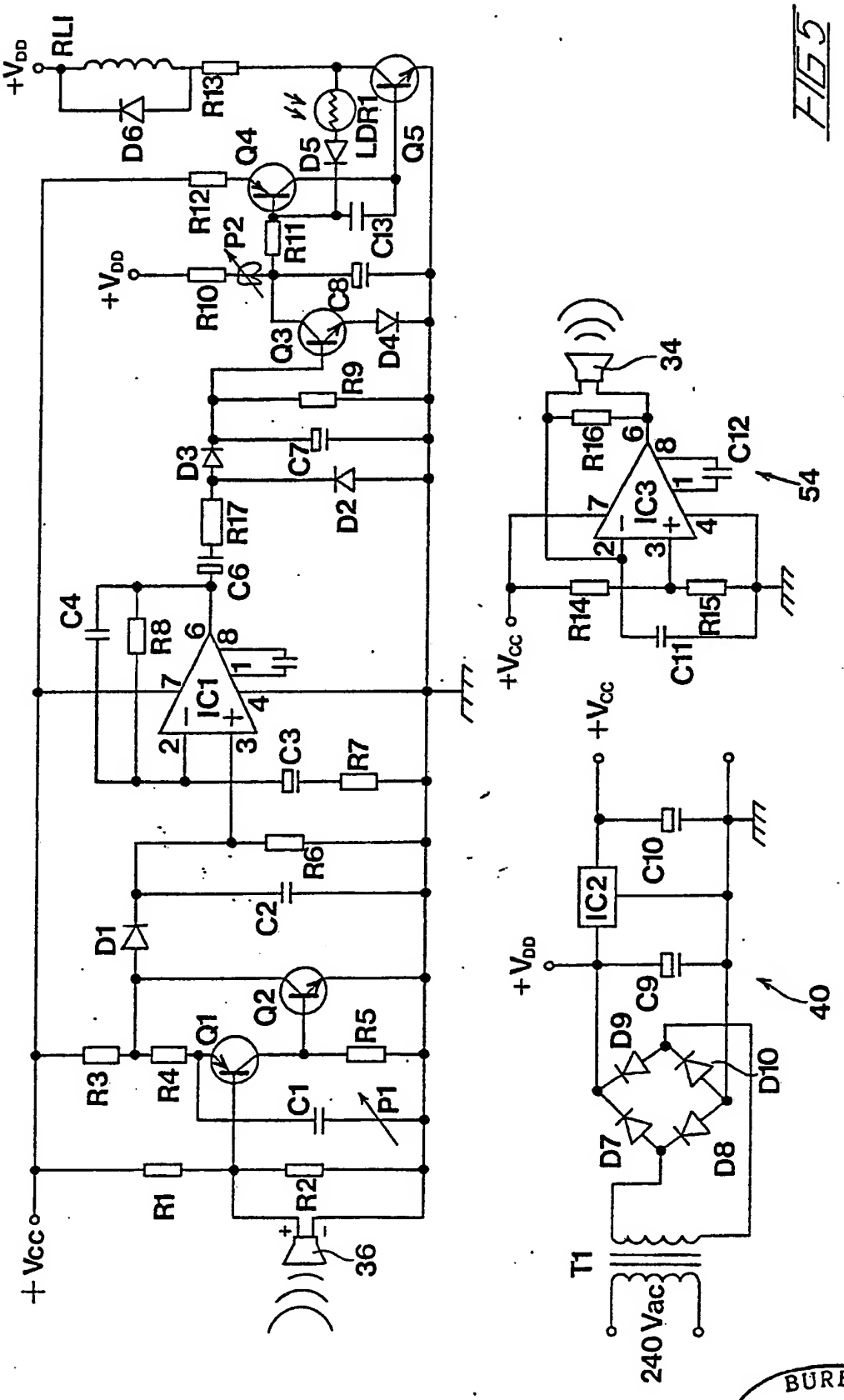


FIG 5

INTERNATIONAL SEARCH REPORT

International Application No PCT/AU82/00118

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC

Int. Cl[3] G09F 19/00, 27/00

II. FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
IPC	G09F 19/00, 27/00

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [5]

AU; IPC as above; Australian Classification 54.18

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
X	GB,A, 1276724 (IMPULS REKLAM AB) 29 May 1968 (29.05.68)	1-14.
X	AU,A, 19732/45 (128339)(ALEXANDERSEN) 17 July 1947 (17.07.47)	1,4,7
Y	US,A, 3808720 (SMITH) 7 May 1974 (07.05.74)	
Y	US,A, 3965592 (ANOS) 29 June 1976 (29.06.76)	
Y	US,A, 3928928 (KALUST) 30 December 1975 (30.12.75)	
Y	US,A, 3857191 (SADORUS) 31 December 1974 (31.12.74)	
Y	AU,B, 52826/73 (477227) (BRACKENRIG) 5 September 1974 (05.09.74)	

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IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
29 September 1982 (29.09.82)	07 October 1982 (07.10.82)
International Searching Authority [1]	**Signature of Authorized Officer [20]**
Australian Patent Office	D.B. CUPITT

Form PCT/ISA/210 (second sheet) (October 1981)